

# **Hydraulic Analysis of Low Stage Conveyance Feasibility and Forward Pump Capacities and Effectiveness**

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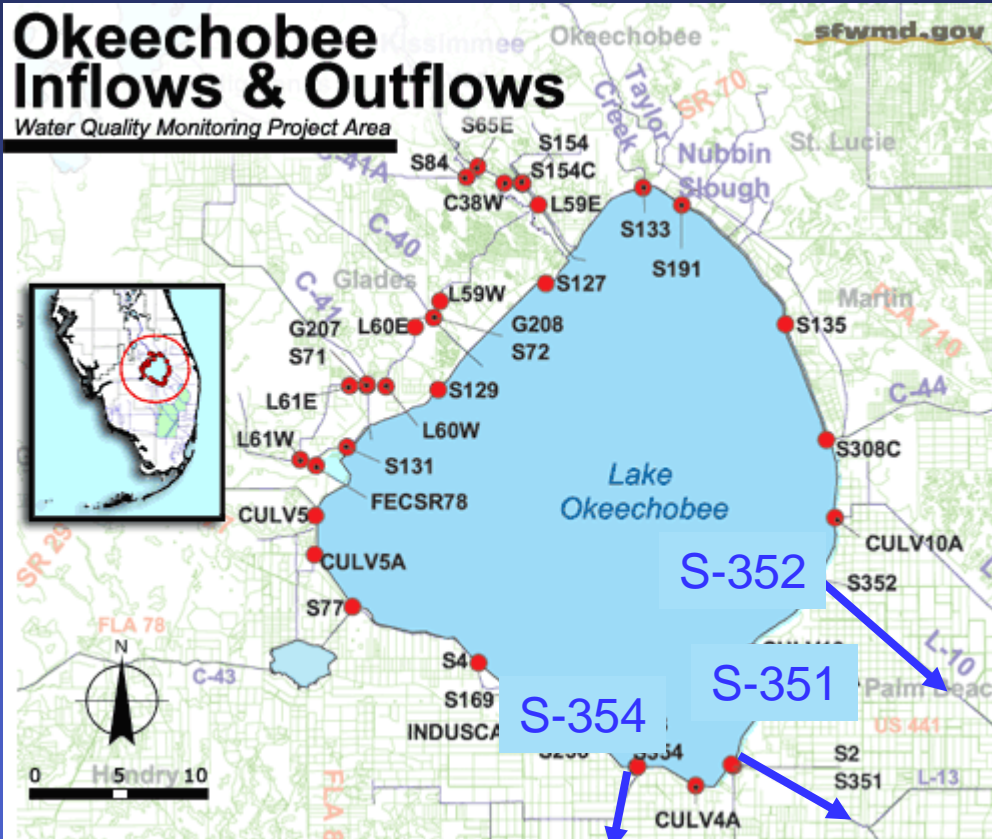
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***sfwmd.gov***

# Question



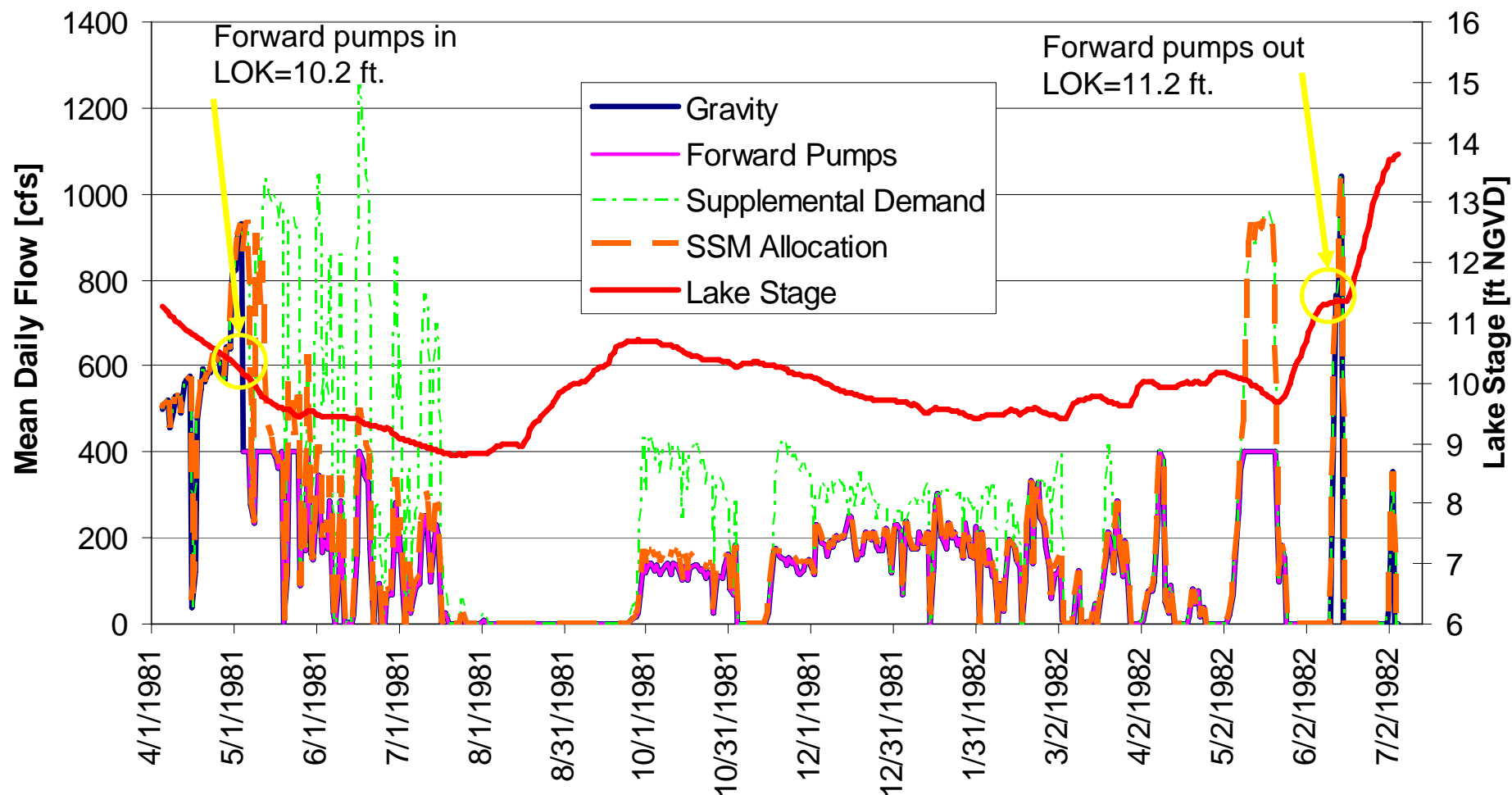
Does the South Florida Water Management Model (SFWMM) provide an adequate representation of the (conveyance) capacity for water control structures (S-351, S-354 and S-352) under gravity conditions and low Lake Okeechobee stages?

# Research

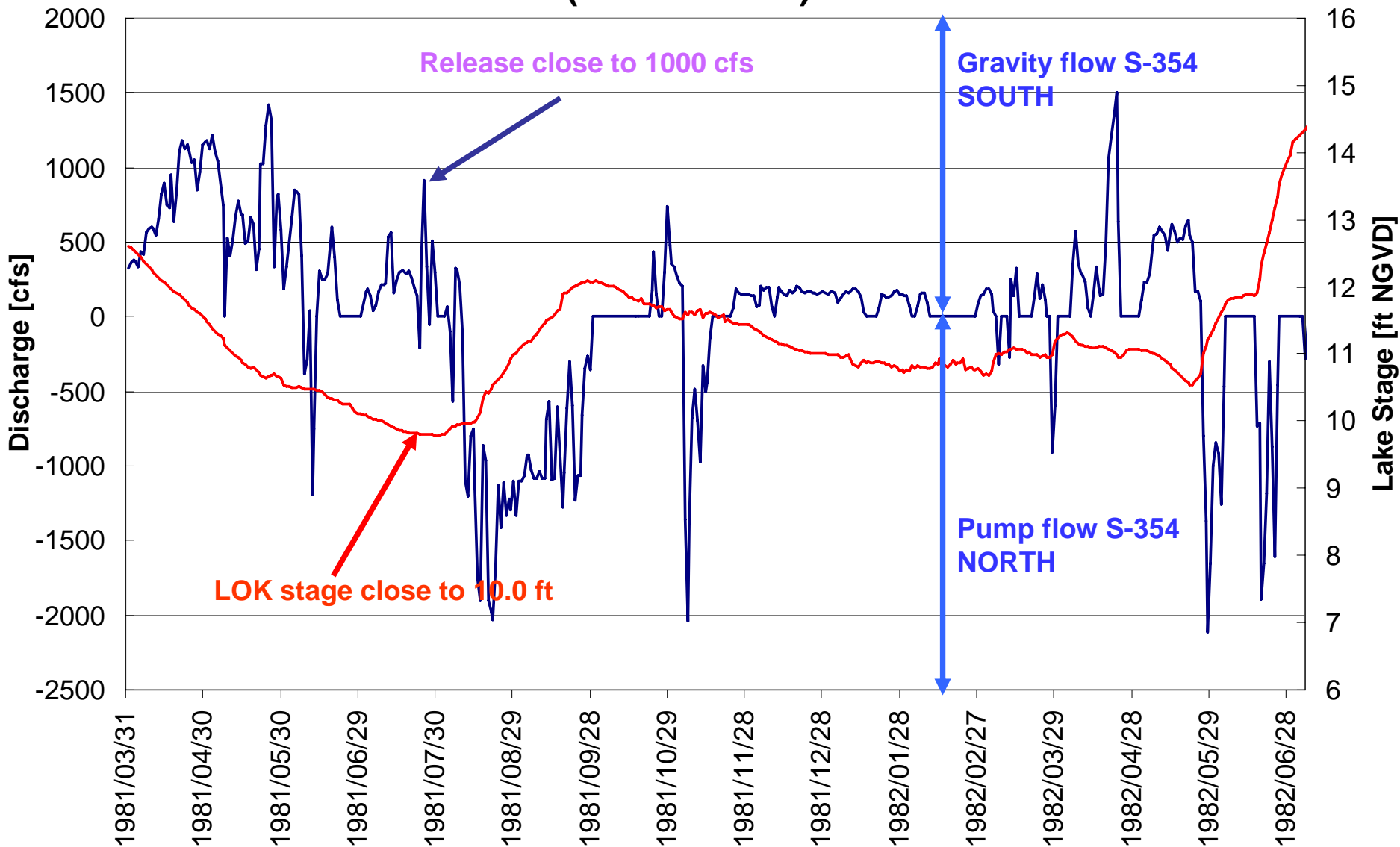
- Analyzed model output from the LORSS simulations, more specifically before, during and after forward pump events.
- Examined historical recorded Lake releases under different Lake stages for the period 1970-2000.
- Examined historical recorded Lake releases and stages during the 2000-2001 drought.

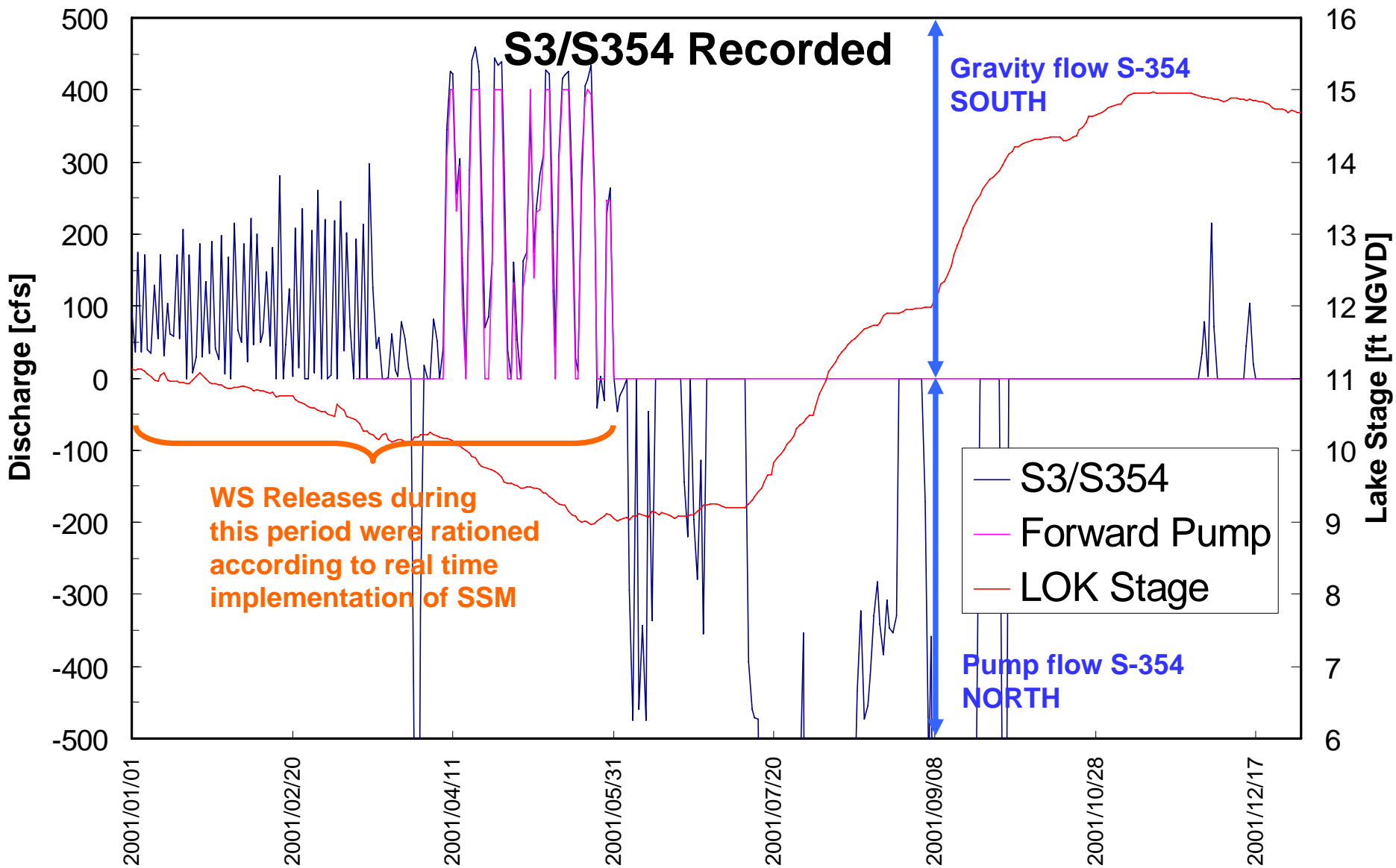
# SFWMM Simulated Supplemental Demands, Allocations and Releases

## Excursion #6 4/8/1981-6/6/1982 (alt-1bs2-m) S3/S354 (Miami Canal)



# S3/S354 (Miami Canal) Historical





# Observations

- The SFWMM simulations show apparently high WS gravity releases before or following forward pump events
- Historical data for the 1981-1982 drought show similar gravity releases under Lake stages around 10.0 ft NGVD
- During the 2000-2001 drought, in general, the magnitude of gravity releases before forward pumping was less than the magnitude of releases with forward pumps

# Conclusions

- For the LORSS, gravity WS releases simulated by the SFWMM, before and after forward pump events (under low Lake stages), are realistic when compared to historical records.



# Resolution to Other Issues

- Difference in gravity releases between the model and the 2000-2001 drought recorded data might be due to the application of different SSM allocation schemes.
- The loss of conveyance capacity in the SFWMM simulations, in the transition from gravity to forward pump, may be overcome in real time implementation by initiating temporary forward pump installation/operation at lower Lake stages.

# Questions?